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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/502,426	02/11/2000	Ricardo Azpiroz	2225-0001	5144
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EXAMINER
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MEHTA, ASHWIN D

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 09/03/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/502,426

Applicant(s)

AZPIROZ ET AL.

Examiner

Ashwin Mehta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-10, 12, 14-17 and 19-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-10, 12, 14-17 and 19-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The objections to the specification regarding embedded hyperlinks and the incorrect reference to Figure 6 as displaying a phylogenetic analysis are withdrawn, in light of the amendments.
3. The objections to claims 3, 7, and 22 are withdrawn, in light of their amendments or cancellation.
4. The rejection of claims 46-48 under 35 U.S.C. 112, 1<sup>st</sup> paragraph, is withdrawn in light of their cancellation.
5. The rejection of claims 1-14 and 20-25 under 35 U.S.C. 102(a) is withdrawn, in light of the declaration by the inventors.
6. The rejection of claims 1-16, 18-29, 31-35, and 49-51 under 35 U.S.C. 103(a) is withdrawn, in light of the declaration by the inventors.

*Specification*

7. The specification remains objected to for failing to identify the sequences in Figure 3 by sequence identifiers. Applicants traverse the objection in the paper received 12 June 2002. Applicants' arguments have been fully considered but were not found persuasive.

Applicants amended the brief description to Figure 3 by identifying the DWF4 polypeptide by SEQ ID NO: 2. Applicants argue that the remaining sequences are art sequences and do not need to be in the sequence listing, and cite a passage from MPEP 2422.03 for support (response, page 18, 3<sup>rd</sup> full paragraph). However, this same section indicates that if the prior art sequence itself is presented, it is necessary to include it in the Sequence Listing, regardless of whether Applicant considers it to be prior art, if it meets the criteria of 37 CFR 1.821(a). The passage cited by the Applicants refers to the situation where the actual sequence is not presented.

Regarding the objection to the sentence spanning lines 24-25 of page 30 for indicating that the coding region of dwf4 in Figure 10 is designated by a light gray bar, whereas Figure 10 contains a colorless bar: Applicants indicate that Figure 10 will be corrected upon submission of formal drawings (response, page 18, 4<sup>th</sup> full paragraph). Applicants are reminded that drawing corrections should have been submitted with the response to the first Office action. The information on how to effect drawing changes is repeated below:

Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability."

Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

#### Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

### *Claim Rejections - 35 USC § 112*

8. Claims 7, 12 (amended), 14-17, 19, and 43-45 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, for the reasons of record stated in the Office action mailed 04 December 2001 under item 5 for claims 1-3, 5-7, 9-45, and 49-51. Applicants traverse the rejection in the paper received 12 June 2002. Applicants' arguments have been fully considered but were not found fully persuasive.

Applicants' arguments and/or claim amendments have not overcome the following issues:

Regarding the recitation "complements and reverse complements thereof" in claims 2, 3, and 5-7, discussed in the Office action on page 5, 1<sup>st</sup> paragraph: Applicants argue that claims 5-7

have been amended (response, page 10, 2<sup>nd</sup> full paragraph). Claims 2 and 3 are cancelled.

However, claim 7 has not been amended.

Regarding the recitation “control elements operably linked to said polynucleotide” in claim 12, discussed in the Office action on page 5, 4<sup>th</sup> paragraph, in relation to claims 11 and 12: Applicants indicate that claim 12 has been amended to be dependent on claim 6 (response, page 11, 1<sup>st</sup> full paragraph). However, it is still not clear if claim 12 is referring to endogenous or heterologous control elements. The issue is unclear, as SEQ ID NO: 1 is a genomic clone, and would already comprise, for example, a promoter.

Regarding the recitation “modulating a DWF4 polypeptide” in claim 15, discussed in the Office action on page 5, 5<sup>th</sup> full paragraph: Applicants argue that “modulating” encompasses overexpression and inhibition (response, page 11, 2<sup>nd</sup> full paragraph). As this is Applicants’ intent, then it is suggested that “modulating” be replaced with —overexpressing or co-suppressing--.

9. Claims 5-6 (both amended), 8-10, 12 (amended), 14-17, 19, 20-22 (all amended), 23, 24-25 (both amended), 26, 27, 28-29 (both amended), 30-33, 34 (amended), and 35-45 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record stated in the Office action mailed 04 December 2001 under item 6 for claims 1, 2, 4-6, and 8-51. Applicants traverse the rejection in the paper received 12 June 2002. Applicants’ arguments have been fully considered but were not found persuasive.

Applicants argue that a patent applicant is allowed to claim his invention broadly, when the invention is described sufficiently, and Applicants submit that the specification complies with the requirements for written description (response, page 12, 2<sup>nd</sup> full paragraph).

However, the specification does not describe structures that comprise as few as 15 or 30 contiguous nucleotides of SEQ ID NO: 1 that also have its 22 $\alpha$ -hydroxylase activity. Further, the specification does not describe a function for reverse complements of SEQ ID NO: 1. Furtherstill, Applicants have not described any control element other than the promoter activity of bp 1-3202 of SEQ ID NO: 1 and the 1.1 kb fragment of SEQ ID NO: 1 upstream of the translation start site.

10. Claims 5-6 (both amended), 7-10, 12 (amended), 14-17, 19, 20-22 (all amended), 23, 24-25 (both amended), 26, 27, 28-29 (both amended), 30-33, 34 (amended), and 35-45 remain rejected under 35 U.S.C. 112, 1<sup>st</sup> paragraph, for the reasons of record stated in the Office action mailed 04 December 2001 under item 7 for claims 1-45 and 49-51. Applicants traverse the rejection in the paper received 12 June 2001. Applicants' arguments were fully considered but were not found persuasive.

Applicants argue that the claims have been amended to recite a sequence comprising at least 15 contiguous nucleotides of SEQ ID NO: 1, complement, and reverse complement thereof (response, paragraph bridging pages 13-14). However, the specification does not teach sequences that share at least 15 or 30 contiguous sequences of SEQ ID NO: 1 and which encode a protein that has the 22 $\alpha$ -hydroxylase activity of SEQ ID NO: 2. Further, SEQ ID NO: 1 encompasses sequences that are not part of the DWF4 gene. The claims then encompass

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polynucleotides that can comprise 15 or 20 contiguous nucleotides from these regions that are unrelated to DWF4. Furtherstill, the specification does not teach the function of any reverse complements, and therefore how one should use them.

Applicants argue that in the instant specification, Applicants teach *dwf4* control elements and methods for determining if a sequence has 90% identity to bases 1-3202 of SEQ ID NO: 1. Applicants argue that one of skill can determine, as in Kim et al., the promoter activity relative to wild type using routine experimentation (response, paragraph bridging pages 14-15). However, the recitation "control elements" encompasses more than just promoters, but also any type of transcriptional or translational regulatory element. The specification only teaches the promoter activity of bases 1-3202 of SEQ ID NO: 1 and of bases 2102-3202 of SEQ ID NO: 1 (the 1.1 kb region upstream of the translational start). No other control element is taught, and the specification does not provide any guidance where other control elements lie within SEQ ID NO: 1, nor what all of the other control elements are in SEQ ID NO: 1.

In response to the issue that the claims are not enabled for the alteration of all phenotypes, Applicants amended the claims to remove recitation of phenotypes related to brassinosteroids, gibberellic acid, cytokinins, and auxins (response, page 15, 1<sup>st</sup> full paragraph). However, claim 39 still recites these recitations. Further, claims 28 and 38 still encompass any and all phenotypes. As discussed in the last Office action, the specification teaches the phenotype DWF4 overexpressing transgenic plants, which are increased height, increase in the number of branches, increase in seed production, larger leaves. Choe et al. teach that flowering time is not altered in the overexpressing plants. The specification teaches that *dwf4-1* mutant plants show decreased plant height, smaller leaf blade length, accelerated flowering time, an increase in the



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number of rosettes and inflorescences (Table 1). There is no indication that overexpressing or inhibiting DWF4 can produce other phenotypes, as broadly encompassed by the claims.

Applicants also argue, in relation to the lack of enablement for using the disclosed sequences for making plants displaying dwf4 mutant phenotype, that the claims do not contain an element requiring that other genes remain unaffected (response, page 15, 2<sup>nd</sup> full paragraph). However, the claims still encompass phenotypes that are not associated with the dwf4-1 phenotype. The specification does not teach one how to use plants displaying other phenotypes.

Regarding the issue that the claims encompass non-plant and non-bacterial host cells: Applicants indicate that claim 25 has been amended accordingly (response, page 15, 3<sup>rd</sup> full paragraph). However, other claims still encompass non-plant and non-bacterial host cells.

11. No claim is allowed.

#### ***Contact Information***

Any inquiry concerning this or earlier communications from the examiner should be directed to Ashwin Mehta, whose telephone number is 703-306-4540. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays from 8:00 A.M to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at 703-306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 and 703-872-9306 for regular communications and 703-872-9307 for After Final communications. Any inquiry of a general

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nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

A handwritten signature in black ink, appearing to read "Amy Nelson". The signature is fluid and cursive, with the first name "Amy" and last name "Nelson" clearly distinguishable.

A.M.

August 27, 2002

**AMY J. NELSON, PH.D**  
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